2016

Liability Issues and 3D Printing

Mark Bartholomew

Gianni P. Servodidio

Katherine Strandburg

Felix Wu
Benjamin N. Cardozo School of Law

PANEL 2: LIABILITY ISSUES AND 3D PRINTING

MARK BARTHOLOMEW*

GIANNI P. SERVODIDIO*

KATHERINE STRANDBURG*

FELIX WU (MODERATOR)*

Felix Wu: We'll now go ahead and get started with our next panel. My name is Felix Wu. I'm a professor here in our IP and Information Law Program. And I have the pleasure of moderating our next panel, which will follow quite nicely the previous one, where we started by looking at industry perspectives on 3D printing.

Now we're going to turn a bit more closely to some of the liability issues that are being raised. Natalia offered up the challenge of, "Go out there and solve our problems." I don't know that we're going to be able to solve all the world's 3D printing problems, but at least perhaps we can see where some of the pitfalls might be in terms of where liability for 3D printing might go.

So, we've got three panelists here today. First, on the far right, Gianni Servodidio, who's a partner at Jenner & Block, in their Content, Media and Entertainment and Trademark, Advertising and Unfair Competition practices. He's focused primarily on a variety of copyright and trademark issues, particularly in new media and Internet areas, as well as in 3D printing specifically, in a way that I think will be quite interesting to be able to draw from.

Next we have Mark Bartholomew, who's a professor at the University of Buffalo School of Law. Mark is an expert particularly in issues of secondary liability and also in issues at the intersection of Internet law and IP.

And finally, we have Kathy Strandburg, who's the Alfred Engelberg Professor of Law at NYU. Kathy has written in many areas that touch on technology one way or another, both with respect to questions of innovation and innovation policy, as well as with respect to questions of privacy and privacy law and regulation and the like, and written extensively in both of these areas in ways that I think will create a lot of insight into the questions around 3D printing, as well.

---

* Professor of Law, SUNY Buffalo Law School.
* Partner, Jenner & Block.
* Alfred B. Engelberg Professor of Law, New York University School of Law.
* Professor of Law & Faculty Director, Cardozo Data Law Initiative, Benjamin N. Cardozo School of Law.

We'll run this panel slightly differently from the last one. Each one of the panelists will give a short presentation, and talk particularly about an area of law or a type of liability that might be raised by 3D printing. I will then ask some questions to try to explore some of these areas further and then we'll open up to questions from the audience.

So first, Gianni.

Gianni Servodidio: Thanks, everyone. I want to compliment the last panel. I thought it was really an excellent discussion of the unique issues facing 3D printing, and I thought you guys really have a great grasp of some of the legal issues that we're going to talk about a little bit more.

So I want to start by talking about copyright law. And I think a comment was made on the last panel that, you know, who cared about copyright law before the MP3 file, or before music became digitized. And I think in some ways there's some accuracy to that.

Copyright law really became a more critical tool for intellectual property owners in the digital age, when files became digital and capable of endless viral distribution over the Internet. And it became more of a critical focus.

And it's really been fascinating to see the way the law has grappled with it. Because there's competing concerns. There's desire to protect copyright law and innovation and creativity. And then there's also a palpable desire by courts not to stifle innovation. The economy of the Internet is critical for this country.

And we've seen courts really take that into account as they're trying to fashion legal rules that balance these competing interests. So you can start with the Sony Betamax case. There, there was absolutely a rule crafted to protect the substantial non-infringing uses of that device, even though there may have been some knowledge by the manufacturer that it was capable of infringing purposes.

A doctrine developed that said, if there's substantial non-infringing uses, there's not going to be an imposition of secondary liability. You fast-forward a decade to the Grokster case, involving the distribution of peer-to-peer software that was really primarily used to copy copyrighted music files.

There the Supreme Court articulated another rule that said if you do something, if you distribute a product with an intent to foster copyright infringement, you're going to be held liable for the consequences of your actions. So those are kind of the pillars of the decisions. And there's a lot of gray area in between. And it's too ambitious today for me to cover all of digital copyright law. So let's focus a little bit on how it relates to 3D printing.

I assume everyone knows that, generally, copyrights protect works

of authorship that are fixed in tangible media. And that includes a lot of the types of things that can be 3D printed. Primarily, jewelry and toys I would say are the two applications you see now that cover objects that are capable of being protected by copyright.

Once you have a copyright, it's protected regardless of whether it's registered. It lasts for seventy years after the death of the author. And it confers on the owner certain exclusive rights to reproduce and distribute. Those are really the most important ones for the purposes of today's discussion.

When you're talking about copyright law and 3D printing, copyright law only comes into the analysis when you're talking about printing items that are themselves subject to copyright protection.

And a large volume of material on some of the sites that I visited are not going to even fall into that category. You know, cases for your cell phone or common objects that aren't, that don't meet the requisite standard for copyright protection. So my whole discussion, I want to sort of caveat it with, I'm only talking about the analysis of copyrighted objects.

And so then the second part, which I think is going to maybe be a little bit controversial, is a dot STL file itself that is subject to copyright protection. And I think there's been maybe an assumption on the last panel that's not the case.

My analysis—and I think the analysis of content owners—is that if you create a digital file which is basically a blueprint of a copyrighted object that lets you render that file in three-dimensional object in two-dimensional form on a computer and then print it out, that that in and of itself would be within the scope of the exclusive rights of a copyright holder. Why? Because it would be a derivative work.

You're taking a copyrighted object and you're making a digital file of it. That would be itself considered a derivative work. There's a Second Circuit case law to that effect. So that's an important sort of piece of the analysis. Is the underlying object copyrighted? And if it is, the 3D model file of that copyrighted object is itself within the scope of the copyright owner's rights.

So then, when you talk about copyrights, you look at direct and secondary liability. And I'd like to maybe just walk through a couple of examples of how those issues might be analyzed from the perspective of a content owner.

I think the first step is who's doing the act of copying. Let's look at it from the perspective of the end user. I'm sitting in my apartment. I have a great 3D printer that I use. And I'm printing out a copyrighted object for my own personal use.

Well, under the classic definition of copyright law, I'm making a copy. I am reproducing a copyrighted work, and it really doesn't matter

if it's for my own personal use or if I'm selling 10,000 copies. The way most courts have looked at it, they say if you're reproducing a copyrighted work, that's not a fair use. That would be the Napster case.

So, I think the same analysis would then apply to the uploading and downloading of a dot STL file for a copyrighted object. Under the classic analysis, where you are reproducing or you're uploading or downloading a copyrighted file as an end user, there would be an argument that you're violating the right of reproduction or distribution.

So how does this play out then in terms of the broader scale, like some of the companies that we heard from earlier? Well, if you are a 3D printer—so you are on behalf of your users printing out copyrighted objects and selling them—that pretty clearly would violate an exclusive right of reproduction.

Because you're actually printing out, you're fabricating physical products in a way that's really no different than any other sort of commercial enterprise. You are, in essence, a factory. Someone's providing you a file, but you are supplying the materials. You are fabricating it. You are manufacturing it. And you are shipping it.

So, in terms of your risk assessment as a business operator, I think that would be the highest level of risk activity. And I think that there would be a very difficult argument to make that that conduct is subject to the DMCA, which I'll talk about a little bit later.

So then, the next category of actors are the Web sites that actually host these files themselves, like the TurboSquids and Thingiverses of the world. These are companies that don't fabricate products, but they host these CAD files and provide an online marketplace for the uploading and downloading of those files by their user base.

There is some argument that those actors would themselves be committing direct copyright infringement by doing that. Although that's a very tough argument because, under copyright law, the way it's developed, you have to be engaging in volitional conduct as one of those types of site operators.

So if you're providing a platform for users to upload and download these CAD files, there is a strong defense to a claim of direct infringement that you're not engaging in any volitional conduct yourself, you're just providing a platform for your users to engage in conduct that may or may not be infringing. So that's how you might look at the issue of direct liability.

But then there's a whole second prong of copyright law which deals with secondary liability. And there's really three primary theories. Vicarious liability, and there the issue is, do you have the right and ability to control the infringing conduct? And if so, do you derive a financial benefit from it?

And in terms of your risk assessment as one of these businesses,

the theory of secondary liability is the one you need to be the most focused on. Because there is a pretty good argument that if you're providing one of these online platforms that lets users upload these CAD files, you may exercise some control over your user's activities.

You can have terms of service. You can say, "No, you can't upload a CAD file for a firearm." You can make decisions as the platform operator that may give you some legal liability, because you're exercising some control over what happens on your platform.

And then, in terms of the financial benefit prong, there's also some exposure there because the way the business models for some of these sites work is that there's a revenue-sharing arrangement. You allow your users to sell these CAD files, but you take a percentage of the sale.

You have less risk there if you run a business model like Thingiverse where it's all offered for free and you're just promoting; really you're trying to get users into the 3D printing space and sell them hardware. There's less risk there.

The other two theories, just to cover really quickly before I pass it on, are contributory infringement and inducement. And those are much, much tougher theories to pursue in this type of space. Why? Because contributory infringement requires two prongs, knowledge and material contribution.

And the way the knowledge prong has developed is that you really have to have fairly specific granular knowledge if a particular file that's available on your site—like a particular CAD file—is actually going to result in the printing of a copyrighted object. So that's a tough argument to make if you're analyzing the site from the perspective of an IP owner.

Material contribution, you'll probably meet that criteria, because you print the file out and it's a set of instructions for your printer to render the file. So a lot of courts would consider that to be a material contribution.

But again, the problem with that claim is that you're going to be subject to a Sony Betamax defense, which is that all these platforms and this whole technology has substantial non-infringing uses. So that's not a theory that you would really expect and, for that reason, I don't think any content or brand owner would really target a manufacturer. That would be the most difficult claim to pursue because there's incredible non-infringing applications.

And then the last theory is inducement. That means you as the site operator are actively encouraging your users to commit copyright infringement. And that's really no one in this room, no one on the panel. But to give you a perspective from the industry of the content industry, one of the most notorious infringing sites on the planet is called—you may have heard about it—Pirate Bay.

And every time the owners get arrested, they get shut down, and then their server's moved somewhere else and they're still up and running. And that's a torrent site. But I think what caught a lot of content owners' and brand owners' attention was, the Pirate Bay sort of devoted a category on its site to what they called fizzables, which are actually torrent files for CAD, for .SCL files.

And so I think that was at least a perspective that raised an alarm bell that, while there's companies that really have good intentions and plan to follow the law, there's also a sort of pirate offshore element that could use this technology for an infringing purpose.

Mark Bartholomew: So, I'm going to talk about trademark law in all this. But let's try to frame it before I go into that and just talk about secondary infringement liability, which I think was really sort of an open road if you went back before the file sharing wars in the '90s. Not that it's all clear now, otherwise we wouldn't have something to talk about. But I think some avenues have been closed off and some are still open.

So I'll try to talk about some of this from a perspective of a rights holder who's thinking about which things are closed off to me and which are still open.

So from the perspective of trademarks, I think that rights holders are concerned about 3D printing and what it might do to their business models. I think trademark law might be an attractive option for a couple of reasons.

One, there's no statutory safe harbor like the DMCA, so it might be more attractive than going for a copyright claim. There isn't a Sony doctrine officially for trademark law, so that might make it an attractive way to go. And then, just in general, you'll have the problem of direct infringers you can't go after. There's too many of them. What they're doing is too small. How do I find the choke points? How do I find the people to stop what's going on? From the perspective of rights holders who are concerned about this.

I'll use an example here because I like having props and examples. So, I've got Optimus Prime here. And I have a friend who's a science teacher in Buffalo where I teach. And they have a 3D printer that they use in the classroom, but he just made this on his own for fun. It's a stencil so he can put powdered sugar on his kids' pancakes and they see Optimus Prime in the morning.

So when you see this, you think it's actually a Hasbro trademark, so maybe they'd be totally cool with the stencil and therefore you don't have to talk about it. But, assuming they're not, they have a different perspective than the Pony situation. Is there any argument against the actual manufacturer of the 3D printer that allowed my friend Jeff to do

this?

Is there an action against these online trading posts for the files, the CAD files, that he used to find this? And is there any action potentially against a printing service? Jeff did it himself with a 3D printer at Williamsville North High School, but let's say he hired someone else and paid for it. I think we know a few things about what actions would be possible and what wouldn't.

First of all, let me go into vicarious infringement. Just like copyright, there's these three flavors of infringement with trademark law: vicarious, contributory, and inducement.

Vicarious is a little bit different when it comes to trademark. And the courts require that there be a direct financial benefit. That should sound familiar as with copyright. And there has to be a particularized relationship with the direct infringer, with the person who actually went out and, let's say, made this stencil and is using it in a supposedly confusing way in commerce so that they'd be a direct trademark infringer.

And the way the courts have construed this, at least when it comes to trademark law is, is that it's going to be impossible to get any liability against any of these folks for vicarious trademark infringement.

When it comes to direct infringement, the courts have said that "direct" means something. You have to get a cut of the infringing proceeds before we're going to say there's a direct financial benefit, and that's going to be hard to show against any of these entities.

They're just saying pay us a flat fee to make Optimus Prime. They're not saying, "Give us pennies on the dollar for each infringing copy you sell." But more importantly, courts really require a particularized relationship with the direct infringer. And it has to be a partnership or an authority to bind that direct infringer in transactions with third parties.

And so what we've seen is that the courts--in trademark law at least--have really emphasized the formal, I think, over the substantive. And they've said, "You know what, it's a really high bar to find vicarious infringement." There's been several successful cases in the last few years where copyright plaintiffs had made vicarious infringement claims.

On the other hand, it's been a while since I've updated my research, but I haven't found any ultimately successful vicarious trademark infringement claims. In fact, I even found one district court decision that awarded attorneys' fees to a defendant because he said the plaintiff came in and alleged an apparent partnership was enough for vicarious trademark infringement and, since we've never found a case where an apparent partnership led to vicarious trademark infringement, we'll grant attorneys' fees.

So, I think vicarious trademark infringement wouldn't be an option if you're the rights holder and you're concerned about Optimus Prime.

So that brings us to contributory infringement. And here I'd say I have good news and bad news for the persons concerned about 3D printing and unauthorized use of their trademark. Contributory infringement requires a material contribution to the infringement and knowledge of the infringing conduct.

First of all, the good news is for material contribution. The courts have been pretty generous and said there's a lot of things that can count as a material contribution. So if you're the site that prints this out on command for someone, that's a material contribution. You're creating the site and facilities for this to happen.

If you're just the sharing site—that online trading post that allows somebody to find the program for the Optimus Prime stencil—that's probably a material contribution too from the cases I've seen.

But where the bad news comes in—and again, this is from the perspective of the trademark holder—is how do we show sufficient knowledge so we can make one of the entities liable, to have knowledge of the infringing conduct? And as with copyright law, the courts have been clear that a reasonable anticipation of infringement isn't enough. Generally suspecting that a lot of people are using your service to infringe isn't enough.

You have to have specific knowledge of particular actions of infringement. And you have to know that Jeff is actually taking this and making an infringing version of it that's going to confuse people. The eBay case in the Second Circuit here, even though it's about four years old, is still the most important case here, I think.

And that case says that, for contributory trademark infringement liability to lie, a service provider must have more than general knowledge or reason to know that the service is being used to sell counterfeit goods. You have to specifically know that there's particular actual infringement activity going on.

Also, I think what's going on in the trademark realm is, even though there isn't a Digital Millennium Trademark Act, we see all these businesses sort of acting like there's a de facto takedown and notice regime.

I know a lot of the 3D printing Web sites for sharing of files are taking this approach. What happens if you voluntarily take notices from trademark holders and take stuff down immediately? Is that enough to avoid the knowledge requirement? The answer is yes. So if you have a robust notice and takedown regime, that should be enough to avoid the knowledge component that someone would need to position contributory trademark infringement against you.

And we can talk maybe a little bit about whether this is a good

system or not. Should we even be adopting a notice and takedown regime in trademark? But that seems to be what's going on and the courts are legitimizing it.

One piece of good news for the trademark holder after this bad news about the knowledge requirement is that we have this willful blindness concept kind of lurking out there, like an 800 pound gorilla, but you can't really see him. So I guess he's the 800 pound gorilla in the closet.

So what the eBay court and other courts have said is, "We require specialized knowledge, but we'll find the knowledge requirement satisfied, if you can demonstrate willful blindness on the part of the accused contributory defendant."

This is still a very gray area. I talked about how there's certain kinds of tributaries that have been closed off in secondary liability law. This one, I think, is open for business. And so one thing I wonder is, to the extent we're sort of handicapping how courts will react to all this, to these kind of destabilizing technologies, will they respond the same way they did to the file sharing threat in the late '90s?

And in those cases, you see language saying we need to reverse engineer the law to position some liability here. There's language that says, well, because it's impossible to go after the direct infringers, this is the only practical option. So let me think about how to construe a secondary liability law in a way that will at least allow these rights holders to get some purchase here.

It's going to be hard to do that now that we require specialized knowledge for contributory infringement, whether we're talking about copyright or trademark. But there's some room to maneuver I think, when we're talking about willful blindness.

The eBay decision again holds that willful blindness is when a service provider has "reason to suspect" that users of its service are infringing a protected mark and then it goes on to say that they are looking the other way. Well what does "reason to suspect" mean? What does "looking the other way" mean? That's pretty vague, right?

We have a little more purchase on this from the Supreme Court's decision recently in the Global-Tech case. That's a patent case. But they say willful blindness equals a subjective belief that there's a high probability that an infringement is taking place, and that the accused defendant has undertaken deliberate actions to avoid learning that those actions have taken place.

So maybe when we think of our different 3D printing parties, maybe the file sharing site has hidden some information from its lawyers. That's a deliberate action. Do they have a subjective belief that infringement is occurring?

Maybe they did a market survey and they found out that all their

predicted clientele want to use this to infringe the Optimus Prime trademark? I don't know what other scenarios might apply, but looking for the kind of evidence that adds up to subjective belief and deliberate action will be crucial.

But these are really open questions and I think that's the area where we might see a lot of activity when there's finally litigation and these cases get decided.

Maybe just kind of a last point here is that we normally think in intellectual property of copyright and patent being levers for innovation. And the $64,000 question is how do we balance that incentive we need to give to the original creators with the ability of downstream actors to use those creations themselves?

And nobody has the answer as to where that sweet spot is. But that's the question we wrestle with with copyrights and patents. We don't normally think of trademark in the same way, but I could see to the extent we may have years of litigation about 3D printing, trademark might be brought into service and it'll be used to settle some of these questions.

Katherine Strandburg: Okay. So I'm going to talk about patent law. And I think it's very, actually, interesting. I'm going to be a little sort of detailed patent professor nerdy about this. Because I actually think that patent is perhaps quite different from copyright and trademark in terms of its implications here. And so I think it's wise not to just lump them all together.

And there are a couple of big reasons for that in patent law. One reason is that in patent law in general, infringement is both more difficult to prove and easier to prove than for copyright.

So it's more difficult because you actually have to look at the patent. So there's a patent out there. There has to be a patent. Somebody has to have applied for a patent. You don't have to have applied for anything necessarily to get a trademark and you definitely don't have to apply for anything to get a copyright. So there has to actually be a patent. That's very important.

The way in which it's easier to prove though, is that there is no requirement of copying. So you can infringe a patent without copying anything. If you're an independent inventor, if you know nothing about the patent, if you make something that is within the claims of the patent, then you are an infringer. So patent law is different in that regard.

Patent law is also different because in patent law, secondary liability is statutory. And it's been around for a long time. So it's not something that the courts are tweaking. Sure, there's a lot of room for judicial interpretation, but we have a statute. And the statute gives us two types of secondary liability.

One is inducing infringement. And the other is contributory infringement. Those terms sound familiar by now because you've heard them from the people talking about copyright and trademark and that's because they copied from patent law. However, the meanings are not nearly, I think, quite as squishy. I don't know if other people will agree with that.

But for any of these kinds of secondary liability, you've got to have proof that somebody actually directly infringed the patent. And direct infringement here means, again, one of a few statutory legally listed things, like making, using, offer to sell or import.

All types of secondary liability also require a fairly high level of knowledge or the new one is willful blindness, which the Supreme Court talked about in the Global-Tech case. But I think it's kind of interesting to know that willful blindness came up in the patent law area as a rejection of what the lower appellate court—the lower appellate court in patent law is the Federal Circuit—had said which was that deliberate indifference was enough.

So willful blindness is seen to be a pretty high standard. Especially when you consider that the kind of knowledge that you have to have for secondary liability in patent law is knowledge of the patent and knowledge that you're infringing the patent. So you have to know that there's a patent out there and you have to know that you're infringing it.

In the same way, willful blindness is not just willful blindness in the sense that there might be something out there doing something infringing. You have to be willfully blind to infringement of this patent. So depending on your perspective, I think that makes it much better or worse, or a happier or sadder story than copyright and trademark.

I'll go through each of these one at a time. But as I go, I'll talk a little bit about how they relate to 3D printing.

So the first question you have to have, if you want to talk about infringement liability and secondary liability in particular, is: where's the direct infringement? Who's the direct infringer? So in the 3D printing area, you have sort of two likely categories of direct infringers.

One is the people at home who are doing their personal 3D printing. And then the other one is custom printing shops, small manufacturers and retailers or large ones too, but kind of the new part of it is smaller manufacturers and retailers.

So in thinking about this in terms of patent infringement, one question you might think about is: how likely is it that the person at home with his garage 3D printer—or maybe it becomes his study 3D printer, or family room 3D printer or something—is actually going to be doing much in the way of patent infringement? And I guess I have a little bit of skepticism that that's going to be a huge issue.

Because I think that printing an object really isn't data. So making

a copy of a digital thing is very, very easy for anyone. Printing something from a 3D printer, even when we all start to have 3D printers and so on, is still just not the same thing.

Even printer printers, like inkjet printers and laser printers, are much more of a pain than making a digital copy. When you're talking about printing an object, it's going to be even more of a pain, no matter how good the printers get.

Also, of course, you're going to have to have materials to make this stuff with. So it's not just data, it's not just ones and zeros. You're going to have to have materials. And with your typical person, with our typical 3D printer, I think it's going to be quite some time before they're going to want to have a whole bunch of different kinds of materials and all this kind of stuff.

So I think that a lot of things that people are going to be doing in personal 3D printing are probably going to have copyright issues, and may have trademark issues, but are fairly unlikely to have significant enough patent issues that manufacturers are going to find it worth their while to go after.

There's a little bit of evidence that, at least right now, this might be somewhat the case. I ran into a study of 12,000 different files on Thingiverse. And it seemed that something like half of them are for things that seem pretty unlikely to be patented. Models, art, fashion, toys, maybe hobby, learning, and then the non-3D printing category which I found. Really, on Thingiverse there's a non-3D printing category. Apparently, there is.

Then of course the other half are things that could be patented. Household gadgets, tools, and most interestingly enough, the biggest category: pieces and parts for 3D printers. Again, that's something that I think people who are hobbyists in 3D printing are going to be likely to do, but most of us are not going to make them. We're going to go buy that stuff.

Another interesting thing they found in their study was they looked at the 200 most downloaded items and found that twenty-three of those were what they called substitutes—what I think we could call copies of things—that are out there on the market. Now, I don't know exactly what their criteria are, or whether they would be the same as copyright criteria. Probably not. I don't know, is that a lot? Is that a few? It doesn't seem to be an overwhelmingly large number.

Perhaps I'm totally wrong about this and you can all tell me. But my feeling is that the real concern is that the real direct infringement players here are going to be custom printing shops and small manufacturers and retailers. You know, people with a business that is making these things. And so, I just think that that's going to be where the action's going to be for patent law.

I just wanted to mention one thing. It is true that a lot of the things that I'm saying will probably not be patented might very well be amenable to design patenting. So, maybe we'll start to see that becoming a bigger thing. But a lot of things that could be design patented aren't, because people don't find it worthwhile. That's changing.

So now, moving on to secondary liability. If you want to show inducing infringement, we already mentioned the Global-Tech case that says you have to have actual knowledge of the patent and of infringement or this willful blindness, which is a lot more than deliberate indifference.

And we have a pending case in the Supreme Court right now, where even if you know about the patent, and you know that you technically infringe, if you subjectively believe that the patent is invalid, that might be a defense to induced infringement.

There also is a requirement besides the knowledge that you are doing something of active inducement. And I think that's somewhat similar to what's already been discussed. But I think it's highly unlikely that just hosting a forum for posting is going to be enough to be considered inducing infringement.

It's not even clear whether, if you make a copy of something with your non-existent 3D scanner and you upload a file, is that even enough to induce infringement? Or do you have to do something more specific? That's an issue I'm sure that the courts will get to eventually in this area.

And then there's contributory infringement, which is quite a different beast in patent law than it is in copyright or trademark. First of all, you only can do contributory infringement if you sell, offer to sell, or import. So if you're not selling something, you're not contributorily infringing unless the courts decide to really stretch that.

Secondly, the thing that you are selling, offering to sell or import has to be a component of a patented invention. And we already have case law from the court that tells us that a blueprint is not a component, software on a master disk is not a component. So I would say it seems highly unlikely that a 3D printer file that you use to make the thing is going to be deemed to be a component, given the current law we already have on the books.

In addition, you have to know that the component is specially made for use in infringement, and not a staple article of commerce suitable for substantial non-infringing use. So it takes a lot to do a contributory infringement.

Contributory infringement in patent law is aimed at people who are really trying to avoid being a direct infringer by putting together all the pieces of something that's patented and then selling it, something like

that.

So where does that all lead in terms of conclusions? A main point I want to say is that the 3D printing situation, I think in general and particularly for patent law, is very different from the peer-to-peer file sharing issue from the trademark and counterfeiting issue on eBay.

Primarily because, for patent law, it's very unlikely that uploaders are going to be infringing the patent unless they are, whether directly or indirectly infringing, secondary or direct infringing. Unless—and this was the one thing I thought of—I take something that is marked and has a patent number on it. And I file off the VIN number. I remove the patent marking and then I upload the file. That might be something that would count as inducing infringement for an uploader.

Similarly, I think it's pretty unlikely that most file hosting sites or printer suppliers are going to infringe. So I think the people at most risk for patent law infringement are the 3D printing shops and small manufacturers and retailers. And that's not because of secondary liability, that's because of direct infringement.

And direct infringement requires no mental state at all. No knowledge, nothing. So I think that's the place where the infringement cases are likely to be successful, where it won't matter that you can't show willful blindness or whatever.

It would be possible to sue consumers who print at home. But they're not attractive targets as the record industry learned quite well. A lot of things they particularly decide to print won't be patentable.

One of the things that I think might be interesting to think about in the patent area is that most things that are 3D printed can be marked. And so I think it's possible, and this is just speculating, that patent marking may begin to play a much more significant role here. Because if something is marked with a patent, and then you go ahead and copy it and upload it, it just starts to look much worse. And you'll know about the patent.

So—and this is very, very tentative—what do I kind of conclude from that in terms of policy thinking? The first thing I think is that I don't see any reason to rush to try to change the law to beef up patent infringement liability. I think existing legal tools, including marking, may be quite sufficient to address the most commercially significant infringement.

And in fact, I think it's possible that what we should really be concerned about is that there may be too much liability risk for 3D printing shops and small manufacturers and retailers, who might be deterred by the potential IP liability and other liability, which was already mentioned in the previous panel, and product liability and all these kinds of things.

And I also think that that's a problem. Because things are not data.

I think these institutions may be very important if we want to realize the potential of 3D printing and all that creativity that people have out there, and all of the crowdsourcing and open source and so forth. I don't think we should be depending only on people's 3D printers they have in their family rooms.

So maybe we do need to do something in the way of some kind of safe harbor for these institutions who are at risk as potential direct infringers. Maybe a notice and takedown kind of approach. Maybe something that works more directly with marking. Haven't thought that through at all, so I would love to hear what people think. And that's it.

Felix Wu: Great, that's wonderful. So I'll address a few questions to the panelists here, particularly to try to bring together the different areas here. One thing I'd like to start off with is—and I think, Kathy, you were starting to think about this—what's the effect of what the structure of the market turns out to be, with respect to then what liability looks like?

In particular, on the one hand we have the touted model where everyone's got a 3D printer in their home and it's all about sharing the files, and then all the printing is happening locally. Versus the model where, in fact, the printing that's happening within homes is not all that significant, and what's really happening is that people are getting stuff printed elsewhere and the Kinkos of the world are really where all the action is happening.

So I think it's worth thinking about, well, what difference would that make even just under current law or what difference does that make in terms of the kinds of liability that are raised under one model versus another. So, thoughts on that?

Gianni Servodidio: From a copyright perspective, the most obvious issue is that the activity that you just described—running your own print shop—is not necessarily subject to existing safe harbor under the Digital Millennium Copyright Act. And why is that? Because the Digital Millennium Copyright Act is not sort of a blanket safe harbor. It protects specific kinds of activity. And the most relevant to this discussion is uploading content at the direction of a user.

But once you're engaging in the actual operation of a printing press or a printing company, you've gone beyond just merely hosting material that's stored at the direction of the user, to fabricating it on behalf of a customer.

There's a decision I think someone mentioned in the last panel. The CafePress case out in the Southern District of California where the DMCA defense was raised. I forget what the court said—it was an odd procedural posture—but the court's inclination was to hold that there's

not DMCA safe harbor for that type of activity.

So I think what's critical in terms of your analysis of liability is how the ecosystem emerges with the different players, and it's much more of a threat if you're a brand owner, or if you're a company that's running professional 3D printers that can fabricate very high quality products. Whether there should be a defense, is a question I'd throw out to my other panelists.

Mark Bartholomew: We'll get there. So for a trademark, I'd say that there's going to be a lot of problems with trying to attach liability to individual users. So, unlike copyright where if you make a copy in general you commit infringement, trademark has this use requirement. You have to use the trademark in a confusing manner. And that's another area of the law that hasn't been really sussed out, but it does seem that there has to be a use in commerce; a sale is what we're looking for.

And so, my friend the science teacher making the stencil? That's fine. I don't think that's the kind of party who has to worry about liability. We have to worry about the shops that are trying to make several of these stencils and trying to make some money off it. That's the part of the ecosystem we're worried about: the print shops that are going ahead and using these things.

I would hate to say that the law would snuff those places out, of course. So, how to give them enough breathing space? Part of me thinks we should just let the courts sort of organically navigate this. But I'm also worried about the track record with file sharing. So maybe some sort of Digital Millennium Trademark Act would be good for these kind of print shops too.

I'm worried about that too though, because the DMCA has some flaws. One flaw is that it's not always that speech protective. You get a notice and you take it down. And there's provisions for counter-notice in the DMCA, at least they have that. The way entities are operating with trademark law now, they get a notice, they take it down, that's the end of the story. So that's not very speech protective at all.

So maybe at least a DMTA could have a counter-notice provision. But, as I said, the DMCA has some problems too. So I'm not sure what the solution is, but, yes, I guess I'd focus—and Kathy mentioned this—I would focus on the print shops.

Katherine Strandburg: Just to follow up on that a little bit: I think it's worth thinking back to why we have the DMCA safe harbors. Why were they enacted in the first place? And also, we have a similar kind of safe harbor for defamation.

And these things came about because there was a concern that

businesses that were performing very useful functions in the Internet age of providing a place where people can share and post things and all this very important stuff, would be subject to a whole bunch of liability and they would really not have the capability to keep track of it all, or to know when there was infringement and when there wasn't and so on.

And that's kind of like one model. And then on the other side we have the sort of copy shop model where you're going to be liable and it's your responsibility, copy shop, to keep track of this stuff.

So these are two very different models that we have going on in the world right now. And I think the question is, how should we think about the 3D printing situation? Is it more like a copy shop where you could expect that they should be able to look and see that this looks an awful like what we're just copying, like, the entire textbook for this course? Is it more like that? Or is it more like a website that gets all kinds of stuff posted and doesn't have practical ways to weed through it? And even that changes over time.

So now there are many more ways to figure out whether certain copyrighted material is posted than there used to be. Although, figuring out whether it's fair use is not so easy. Anyway, I think that we should be thinking about what we are trying to accomplish if we want to think about this. Rather than whether there's liability or is there not.

As a social matter, we may want there to be businesses like this, because they may be doing things that are very useful in terms of promoting creativity.

Gianni Servodidio: The music analogy seems to be kind of apt here. I think there is a real sense that a start-up business should want to be engaged in licensing discussions with content owners if that's a significant part of the business model, and to do it aggressively and early. Spotify is the perfect example.

This is a company that didn't launch first, then ask permission later and get sued, and then have to settle or maybe go out of business. They waited for years and engaged in painful pre-clearance with record companies to get the rights to the catalog. Then they launched and became an enormously successful popular service that delivers streaming content in a very successful way.

I don't think that's a horrible model. I don't think there's anything wrong with that approach, as long as your business is premised around the use of that content. And I think where there's some question in the 3D printing space is: how significant is it for these companies to be able to offer copyrighted popular IP protected works? Or is this really more for the hobbyist, or for people engaging in public domain work? That to me is totally unclear.

But if the way the model is emerging and the way these companies

see their future is to engage in the sale of copyrighted, branded, protected products to drive traffic to their site and to create their business, then I don't think we need to change the law to say that you should engage in pre-licensing clearance to do that.

Felix Wu: So that's a good place to then go to the next question, which is: the Hasbro example was brought up a couple of times and held up as a model of, well, this is a good win-win situation for everybody and if everybody could just do more of this, then we'll all be fine.

Any thoughts on the panel as to whether or not, in fact, this idea that content owners just get together with the relevant parties in the 3D printing world and strike deals. They decide who in the community is going to be licensed to do this, and in what way, and which things they allow. What was the list again of things that were not allowed? So it was, as long as it was not too violent, not too sexual, and no saddles, right?

Gianni Servodidio: Yes.

Felix Wu: Okay, right. So is that the model that we should take going forward? Or are there hazards that you might see in adopting that approach as the solution to these kinds of questions?

Mark Bartholomew: I liked hearing more about the Hasbro situation and how it worked, and it seems better than massive litigation. I guess some concerns I have with that is that it sounded like there was a select group of designers in the community who were sort of picked, and I worried about the folks who don't get picked.

And I have the same sort of concern with a notice and takedown regime. What if you want to use My Little Pony for some sort of transgressive statement? And if you want to do that, a strict notice and takedown regime sounds like you'll get your design taken down, whether you are doing something subversive, or something completely on fours with the My Little Pony ethos.

And so I'm worried about notice and takedown regimes de facto or implemented through law that give short shrift to transgressive appropriations. I guess that's the thing I think we need to look out for. And maybe that's an area where we could have a safe harbor. Or think about designing a safe harbor that allows the fair use types of expressions that we want to allow here.

Katherine Strandburg: I guess I also have some concerns about this in that, when you're talking about copyright area, you have an

industry where there are a relatively small number of very big, very well-organized players. And so you know who to negotiate with if you're worried about copyright infringement. So that's, you know, Spotify.

There's just nothing like that at all in the patent world. And probably not in the trademark world, either. If you have no idea what your customers are going to be printing, you would have no idea who to go to to negotiate these licenses. And maybe you'd get fifty percent of them or something like that by going to the main toy companies.

But there are an awful lot of patent holders out there. And an awful lot of different patents, and even figuring out whether something is infringing is really hard. So I just think that's a pretty huge burden to put on a smaller company, or on a company that's going to be doing a big volume of business where they're not going to be looking in great detail at each thing that comes through.

So I don't know. I'm less sanguine about the possibility that that could work in 3D printing area.

Felix Wu: Great. So we've now mentioned the DMCA or other sorts of safe harbors a couple of times. Do any of the panelists have thoughts on what it is in the DMCA that you think would be particularly useful to borrow here? What it is that you think we might want to explicitly reject? For example, thoughts on red flag knowledge and its relevance here or not?

And alternatively, are there players in the system as to which we ought to be giving even stronger safe harbors? Kathy mentioned the Communications Decency Act, which provides for a fairly absolute form of safe harbor with respect to defamation claims that you don't find in IP.

Are there players here for which we think that that kind of strong safe harbor might be warranted, or is the basic DMCA model more or less right here?

Gianni Servodidio: Well, I think the DMCA applies in this context. I think we should be clear that, if the object at issue is copyright protected, and it's being uploaded in dot STL files to one of these sites, there's a copyright infringement claim and there's an existing safe harbor under the DMCA.

The DMCA itself is a disaster. I mean, it's one of the most complicated, difficult statutes and it just reflects a legislative compromise that was struck many, many years ago. I'm sure both sides of the table of the DMCA are extremely unsatisfied and it's been very costly to litigate. But short of amending the DMCA, we're stuck with it from a copyright perspective.

Just quickly on the other points you raised, I think there's different defenses that are going to apply to secondary liability across the board. There's fair use. There's the First Amendment.

There's existing defenses if the work at issue is expressive. I think the existing law takes into account some measure of protection for things that are non-commercial, that are non-infringing and so on. I'm not sure I see a particularly new safe harbor that needs to be implemented for this context.

Felix Wu: So, can I just follow up? One of the things that you said at the beginning was that the DMCA applies here, but once we start shifting to thinking about "oughts" rather than "is," would it make sense to extend the DMCA not just to, let's say, the sites hosting the files, but also the companies doing the actual printing themselves?

Gianni Servodidio: I don't know. I think that's a tough call. Why would they be entitled to a safe harbor? Is that conduct that you want to encourage? When you are printing and selling copyrighted goods and taking a percentage of the profits of the sale, do you want to impose all the risk on the brand owners to deal with that on a notice and takedown regime?

Or is there some sort of reciprocal obligation, if you're going to be doing the printing, to do some pre-clearance? I don't think that's really a close call from my point of view.

Mark Bartholomew: I guess for me it goes to Kathy's point: what were we trying to do when we enacted DMCA? What were we trying to protect? And the same with Section 230. Is this such an important area of commerce or expression that it deserves these special perks? And I'm excited about 3D printing, but I don't know about the printing shops yet. I don't know. So I don't know if I'd want to expand the DMCA to cover this.

I'm also worried about the DMCA, and even the common law of a trademark copyright contributory infringement, rewarding the big players. The DMCA is super complicated. You can say that's because of hashing things out and they had to kind of compete, and that's what happens when you make legislation.

But I think there's also a benefit to the opaqueness of the DMCA, in some ways, for big players. It helps people who are experienced with this stuff and can navigate it. It hurts the smaller businesses. And I like the idea of not just a couple of places that could print my CAD files for me, but several. So I would like to have my new DMTA, DMCA or whatever for these copy shops to be a little more streamlined. That would be one thing.

Also, if we don't even have a statute, look at the eBay case. What did eBay do in good faith to try to stop infringements? EBay poured a ton of money into these fraud detection programs. So, eBay leaves us kind of unsure of what to do if you're the small business. What do I have to do to avoid liability? Because I can't spend one hundred million dollars on an authentication program.

And so, I guess a safe harbor is worth thinking about, because the smaller shops aren't going to know what to do to avoid liability in some ways.

Katherine Strandburg: I think a lot depends on volume and control, meaning, to what extent is a shop making thousands and thousands of one thing—which would probably enable them to do a little due diligence—or to what they're making five of this and two of that and three of that and four of that. In which case, the due diligence would be a pretty heavy burden.

It also depends on how important we think the innovation coming from smaller types of innovators is. As in, the people who would need to use these kinds of shops to do something other than make copies of popular items.

Looking at the statistics from—and who knows how to interpret those statistics—but looking at the statistics from Thingiverse, it seems like a lot of those people are making creative things. And so I would be concerned about shutting that down.

And I think one other point about the copyright situation here is that with file sharing, it's true that there are fair uses. And even with the eBay situation, it's true that there are fair uses. But most of what's going on there, we all know, is not fair use, right?

With the copyright issue here, I think it's a lot trickier. Which of these things are actually copyrighted, given the useful article doctrine? You've acknowledged that in your presentation, right?

So, there might be a lot of these things that aren't even copyrighted. And I worry about a sort of takedown regime for those, because that issue is certainly not clear. And it's going to be much more common than the fair use question.

Gianni Servodidio: I think for that reason, unless I'm mistaken, you're not seeing brand owners or content owners jumping in and bringing big splashy cases against a 3D printing defendant. I think there's some caution because of that very reason. These are businesses that are operating at least in a manner that seems to be respectful of IP rights.

But I think to understand the perspective of the content owner, there's this abject fear of not getting out ahead of the curve when the

infringement starts happening. The infringement is happening, it's there, but it's at a really small, manageable level. So I think there's a great opportunity for some real dialog and partnership now.

Katherine Strandburg: What would you think about some kind of a minimum commercial value or something like that? As in, for a particular item? In other words, safe harbor for below a certain minimum value? So that way, you don't worry about making five copies of something. And it's only when you get up to making enough copies that you could feasibly think about doing some kind of clearance.

Gianni Servodidio: That might make some sense. Also, you have to keep in mind that there's going to be a lot of defenses if you're making one or two; it's a one off, it's a two off, and then you really can't be engaging in what would be considered willful or bad faith conduct. There's going to be lots of defenses to that that it happened under the existing law.

But I think the analogy of the music industry is really the right one here. How does the toy industry deal with this? They don't want to start suing all their customers. But they don't want to experience the decline in sales that the record industry did. So I think they're really grappling with it.

Felix Wu: Given the hesitancy of some of the content owners here, and given the maybe broader possibilities for defenses and the like, would anyone worry that the creation of a safe harbor might ultimately result in more control by brand owners rather than less?

Katherine Strandburg: You mean, because it would come within notice and takedown regime?

Felix Wu: Or something of that sort, yes.

Mark Bartholomew: Here, maybe I'll just spill out my thought. One thing that you might think about is that the current law and the current practice might be, in fact, on the side of folks in the 3D printing space, rather than on the side of the brand owners. One possibility might be that the creation of a safe harbor, particularly in the absence of any clarity on the law of secondary liability or otherwise, might sort of funnel all the activity within that safe harbor, whether or not the safe harbor was in some sense needed.

It could have turned out that, in fact, were you to not try to take advantage of the safe harbor and just take your chances with existing law, you would have won. But given the existence of the safe harbor, a

company is going to fit within whatever the parameters of the safe harbor are, as opposed to taking their chances with the development of the law.

Katherine Strandburg: That's certainly a possibility, and it depends a lot on how you would design the safe harbor.

Gianni Servodidio: I also think, regardless of the ambiguity in the law, the practice is really emerging that, if you're a brand owner, you're going to send a takedown notice. And if you're a site operator, you're going to ignore that takedown notice at your own peril. And I think that's just the way that it's going to go now, because it's so hard to prove actual knowledge.

So if you're a content owner or a trademark owner, you're going to develop your record of actual knowledge by sending takedown notices. So that gives the site operator a chance to assess and make a legal determination. Those are expensive legal determinations.

Felix Wu: Okay, great. So now, let's open it up to get questions from the audience. Are there folks who'd like to raise a question? Yes, in the back.

Audience Member: [inaudible question]

Felix Wu: Oh, now there's an interesting question.

Katherine Strandburg: There is a general idea that, I mean, it's kind of like what would it be for, right? So if we're talking about what something looks like on the outside, it's kind of hard to do anything with that, right? So maybe we'd be talking about reverse engineering something that is more in the trade secrecy side of things. So yes, I think saying that people can't take stuff apart to tinker with seems like a really bad idea to me. You lose your warranty, usually, if you do that.

Gianni Servodidio: I guess that brings up the point that, while one solution of this isn't the secondary liability doctrine so much, it's DRM, right? Let's use DRM, and when you take your printer home, you've got to plug it into the Internet. So when you download that file, maybe they'll do a search and make sure it's not a trademarked item or a copyrighted item.

I don't think we have the capability of doing that now. But, there's functions now where before I can install Windows, for instance, they're checking up on me and could see that. And then trying to get around that might implicate your anti-circumvention provisions. That would

make me nervous. I've seen it really get around the freedom to tinker, that's so important in the 3D printing culture, at least as it stands now.

Felix Wu: Other questions? Yes.

Audience Member: [inaudible question]

Gianni Servodidio: Yes. I think you apply the same question that you would under all these doctrines. Like, what is their knowledge, are they making a material contribution? There, I think the material contribution is more sketchy. If you're just providing a directory of available 3D printers in your network, then I think you can debate whether that's a material contribution and they probably don't have any knowledge of what they're being used for.

Now if you're running a 3D printing hub saying, "If you want to print out your Barbie dolls, here are five printers in Brooklyn who'll do it for you, because MakerBot won't do it for you," then they're liable for inducement. And by the way that happened.

Felix Wu: Any further thoughts on that? No, okay. Great. Yes.

Audience Member: [inaudible question about patents]

Katherine Strandburg: Well, it all depends on what the patents cover. A lot of what is in any technological device is not covered by patents, because it's not new and non-obvious. So patent law is a bar. You have to do something that's non-obvious. You have to go and apply for the patent. And the patent has to actually cover that feature.

If the patents don't cover those features and, of course, they're always arguments about that. But if they don't, then everybody can copy them and that's competition and we think that's a good thing. So, it is actually really different from copyright in that regard. Because in patent we say that it's not just enough that you thought of it. It has to be non-obvious compared to what's already been out there before.

Audience Member: [inaudible question]

Mark Bartholomew: Well, the history of intellectual property law doesn't have a lot of nice stories in this respect. Most of us spend our time criticizing the process that generates intellectual property laws and how these people got together in a room and did these things they shouldn't have and certain interests gamed the system so, I'm trying to think of a good historical precedent for you. Nothing jumps to mind.

Audience Member: [inaudible question]

Gianni Servodidio: I think you can look at Google—though I hate to tap them as the shining example—but as they got more established and more sophisticated, they took a lot of very pro-active measures to keep infringing content off their site. And then sort of these UGC sites have—I forgot what they call, like, I pledge allegiance to these principals or good UGC sites—and one of them is that you're going to do something proactively as the operator to curtail infringement. And what that might be and how far you're willing to go, that's up for debate, but that's something that some of my clients look at carefully.

Audience Member: [inaudible question]

Gianni Servodidio: Exactly. The courts and litigants have grappled with this all the time. It's like there's no affirmative duty on the site operator to go investigate, there's no investigative duty under the DMCA to go search out infringing content. But it can be one factor. Failure to take steps to mitigate obvious infringement can be a factor. It's a really tough line to draw.

Audience Member: [inaudible question]

Katherine Strandburg: Again, it just depends on how the patent is written. So, if the patent claims in terms of a particular material, and you use that material, then maybe it's better to say it the other way around. If the patent is claimed in terms of a particular material and you don't use that material, then you're not infringing.

I guess you could think about the question, how much should we be worried about the way that infringement might be a problem with respect to the development of materials? I haven't really thought about that much. Although, most of the time, it's probably not going to be such an issue because you're going to buy the material from somebody, the distributor of that material. Most likely, they will have dealt with patent issues and you won't have to worry about it.

You could have a weird situation where you just happen to pick a material that's claimed in a particular patent. But I don't think that's a huge issue, at least off the top of my head.

Gianni Servodidio: But maybe a version of that would be: how do we think about the follow on innovation aspects of 3D printing, right? How do we think about the extent to which it sort of democratizes the ability to play with and make changes to and do more with tangible products in a way that we've seen with respect to copyrighted works?

How do we think about what structures we might want to put in place to be able to encourage that kind of behavior?

Katherine Strandburg: Well, this is exactly why I'm so concerned about the print shops and so on. Because, in general, with the Sony case we've said, we're not going to count the technology as being infringing.

But with 3D printing—to the extent that there are going to be a lot of people who are going to be designing things, but are not able to print them themselves—the printer or print shop is almost like part of the VCR in a certain sense.

And so I'm concerned about the health of those kinds of entities for the purposes of encouraging the kind of user innovation and other kinds of creativity—crowdsource creativity—that we would hope to get out of these 3D printing and similar technologies.

I also understand that if, instead, we're printing thousands of My Little Ponies, it's a different thing. But I hope that we're going to come up with some kind of system that will not leave those players completely vulnerable.

Gianni Servodidio: The good news seems to be that individual home users tinkering are going to be off the hook, legally speaking, I think for the most part and also just from a realistic sense of who you're going to litigate these claims against. So, to the extent they want to tinker with different materials, I think they'll be allowed freedom to do that.

With the print shops, I'm worried about a situation where maybe you're doing something really creative, innovative, subversive with a new material that Mattel would never think of. And I'd hate to have that squashed with just a quick notice and takedown.

Mark Bartholomew: Putting Barbie in a blender?

Gianni Servodidio: I was thinking of that, yes.

Felix Wu: We have time for one more. Anyone else? Yes.

Audience Member: [inaudible question]

Katherine Strandburg: In one sense what they can do is, when they see the thing that was their idea out there, they can find out if it's patented, and they can go and challenge the patent, which is now a lot easier to do than it used to be. Now that we have post-grant opposition. I mean, it's kind of hard to tell, because our post-grant review is very

new, how effective that's going to be for smaller players.

Gianni Servodidio: I also think you can get a copyright on a CAD file. If you create something, a unique and original CAD file, and design it and put it out there and someone copies it, you could have your own copyright in that that you could enforce.

Felix Wu: Okay, great. Please join me in thanking the panel.